

WHAT IS CLAIMED IS:

SubA
1. An image information describing method comprising:

5 sampling a plurality of thumbnail frames from video information including a plurality of video frames at arbitrary time interval and size; and

describing attribute information for specifying the video frame corresponding to each of the thumbnail frames as thumbnail information.

10 2. The image information describing method according to claim 1, further comprising describing additional information contains scene change position information of the video information.

15 3. The image information describing method according to claim 1, further comprising additional information contains frame change value information of the video information.

20 4. The image information describing method according to claim 1, wherein the attribute information contains position information indicative of a position on a time axis of the video frame corresponding to the thumbnail frame.

25 5. The image information describing method according to claim 1, wherein the attribute information contains information concerning the size of the thumbnail frame.

6. The image information describing method

Sub A1
Continues

according to claim 1, wherein the attribute information contains information concerning the resolution of the thumbnail frame.

5 7. The image information describing method according to claim 1, wherein the thumbnail information contains image data of the thumbnail frame or a pointer for the thumbnail frame.

10 8. The image information describing method according to claim 1, wherein the plurality of thumbnail frames are stored as one item of the thumbnail information.

15 9. A video retrieval method for retrieving video information including a plurality of video frames by employing thumbnail information concerning a plurality of thumbnail frames obtained by sampling the video information with arbitrary time interval and size, the video retrieval method comprising:

20 describing, as the thumbnail information, attribute information containing at least first position information indicative of a position on a time axis in order to specify the video frame corresponding to each of the thumbnail frames; and

25 retrieving the thumbnail frame having the closest first position information to a second position information indicative of a position on the time axis of a desired video frame of the predetermined video information.

Sub A1
Continues

10. The video retrieval method according to claim 9, wherein the thumbnail frames contain a frame obtained by sampling only an arbitrary part of one frame of the video information with arbitrary time interval and size.

11. The video retrieval method according to claim 9, wherein the plurality of thumbnail frames are stored as one item of the thumbnail information.

12. A video retrieval method for retrieving video information including a plurality of video frames by employing thumbnail information concerning a plurality of thumbnail frames obtained by sampling video information with arbitrary time interval and size, the video retrieval method comprising:

describing, as the sample image information, attribute information containing at least first position information indicative of a position on a time axis in order to specify the video frame corresponding to each of the thumbnail frames;

describing, as additional information, scene change position information of the video information; and

retrieving a thumbnail frame having the closest first position information to a second position information indicative of a position on the time axis of a desired video information and earlier or later than the scene change position information.

Sub A1
Continued

13. The video retrieval method according to claim 12, wherein the thumbnail frames contain a frame obtained by sampling only an arbitrary part of one frame of the video information with arbitrary time interval and size.

14. The video retrieval method according to claim 12, wherein the plurality of thumbnail frames are stored as one item of the thumbnail information.

15. A video retrieval method for retrieving video information including a plurality of video frames by employing thumbnail information concerning a plurality of thumbnail frames obtained by sampling the video information with arbitrary time interval and size, the video retrieval method comprising:

describing, as the thumbnail information, attribute information containing at least position information indicative of a position on a time axis in order to specify the video frame corresponding to each of the thumbnail frames; and

retrieving a thumbnail frame in which difference from a desired video information is equal to or less than a predetermined threshold.

16. The video retrieval method according to claim 15, wherein the position information described for a thumbnail frame in which the difference from the desired video information is equal to or less than the predetermined threshold is recorded as the retrieval

Sub A1
Continues

result.

5 17. The video retrieval method according to claim 16, wherein the thumbnail frames contain a frame obtained by sampling only an arbitrary part of one frame of the video information with arbitrary time interval and size.

10 18. The video retrieval method according to claim 16, wherein the plurality of thumbnail frames are stored as one item of the thumbnail information.

15 19. A video reproducing method for reproducing video information including a plurality of video frames at variable speed by employing thumbnail information concerning a plurality of thumbnail frames obtained by sampling the video information with arbitrary time interval and size, the video reproducing method comprising:

20 describing, as the thumbnail information, attribute information containing the thumbnail frames and at least position information indicative of a position on a time axis in order to specify the video frames corresponding to the thumbnail frames;

describing frame change value information of the video information as additional information; and

25 changing a reproduction speed of the thumbnail frames according to the frame change value information.

20. The video reproducing method according to claim 19, wherein the thumbnail frames contain a frame

Sub A1
Confirmed

obtained by sampling only an arbitrary part of one frame of the video information with arbitrary time interval and size.

21. The video reproducing method according to claim 19, wherein the plurality of thumbnail frames are stored as one item of the thumbnail information.

22. A video retrieval apparatus for retrieving video information including a plurality of video frames by employing thumbnail information concerning a plurality of thumbnail frames obtained by sampling the video information with arbitrary time interval and size, the video retrieval apparatus comprising:

a first describing unit configured to describe, as the thumbnail information, attribute information containing at least first position information indicative of a position on a time axis in order to specify the video frame corresponding to each of the thumbnail frames;

a second describing unit configured to describe, as additional information, scene change position information of the video information; and

a retrieving unit configured to retrieve a thumbnail frame having the closest first position information to a second position information indicative of a position on the time axis of a desired video information and earlier or later than the scene change position information.

Sub A1
Continued

5

23. The video retrieval apparatus according to claim 22, wherein the thumbnail frames contain a frame obtained by sampling only an arbitrary part of one frame of the video information with arbitrary time interval and size.

24. The video retrieval apparatus according to claim 22, wherein the plurality of thumbnail frames are stored as one item of the thumbnail information.

10

25. A video retrieval apparatus for retrieving video information including a plurality of video frames by employing thumbnail information concerning a plurality of thumbnail frames obtained by sampling the video information with arbitrary time interval and size, the video retrieval apparatus comprising:

15

a describing unit configured to describe, as the thumbnail information, attribute information containing at least position information indicative of a position on a time axis in order to specify the video frame corresponding to each of the thumbnail frames; and

20

a retrieving unit configured to retrieve a thumbnail frame in which difference from a desired video information is equal to or less than a predetermined threshold.

25

26. The video retrieval apparatus according to claim 25, wherein the thumbnail frames contain a frame obtained by sampling only an arbitrary part of one frame of the video information with arbitrary time

Sub A1
continued

interval and size.

27. The video retrieval apparatus according to claim 25, wherein the plurality of thumbnail frames are stored as one item of the thumbnail information.

5 28. A video reproducing apparatus for reproducing video information including a plurality of video frames at variable speed by employing thumbnail information concerning a plurality of thumbnail frames obtained by sampling the video information with arbitrary time
10 interval and size, the video reproducing apparatus comprising:

a first describing unit configured to describe, as the thumbnail information, attribute information containing the thumbnail frames and at least position
15 information indicative of a position on a time axis in order to specify the video frame corresponding to each of the thumbnail frames;

a second describing unit configured to describe frame change value information of the video information
20 in the thumbnail information as additional information; and

a changing unit configured to change a reproduction speed of the thumbnail frames according to the frame change value information.

25 29. The video reproducing apparatus according to claim 28, wherein the thumbnail frames contain a frame obtained by sampling only an arbitrary part of one

frame of the video information with arbitrary time interval and size.

30. The video reproducing apparatus according to claim 28, wherein the plurality of thumbnail frames are stored as one item of the thumbnail information.

5